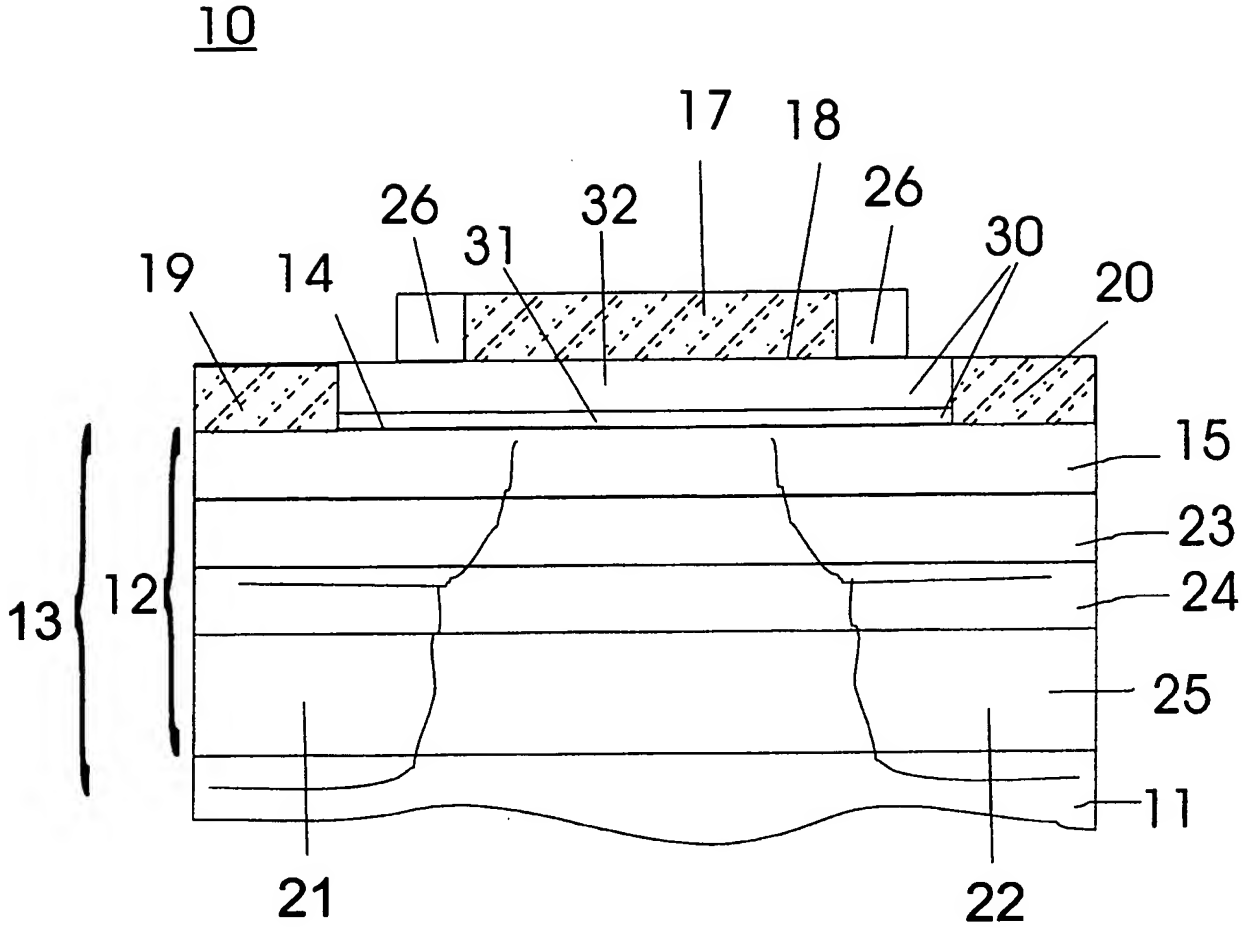

Figure 1

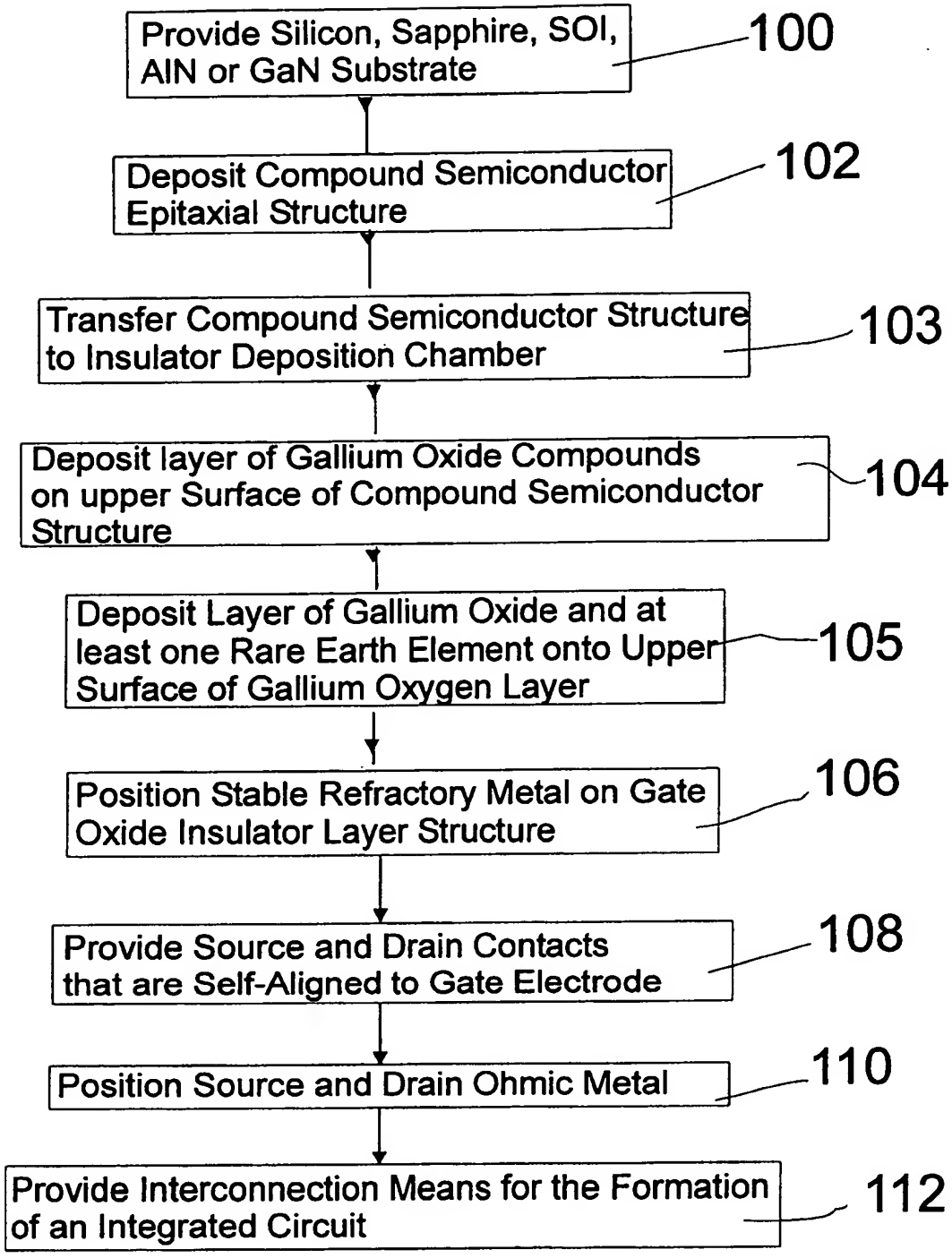
Provide Silicon, Sapphire, SOI, AlN or GaN Substrate
100
Deposit Compound Semiconductor Epitaxial Structure
102
Transfer Compound Semiconductor Structure to Insulator Deposition Chamber
103
Deposit layer of Gallium Oxide Compounds on upper Surface of Compound Semiconductor Structure
104
Deposit Layer of Gallium Oxide and at least one Rare Earth Element onto Upper Surface of Gallium Oxygen Layer
105
Position Stable Refractory Metal on Gate Oxide Insulator Layer Structure
106
Provide Source and Drain Contacts that are Self-Aligned to Gate Electrode
108
Position Source and Drain Ohmic Metal
110
Provide Interconnection Means for the Formation of an Integrated Circuit
112

Figure 2

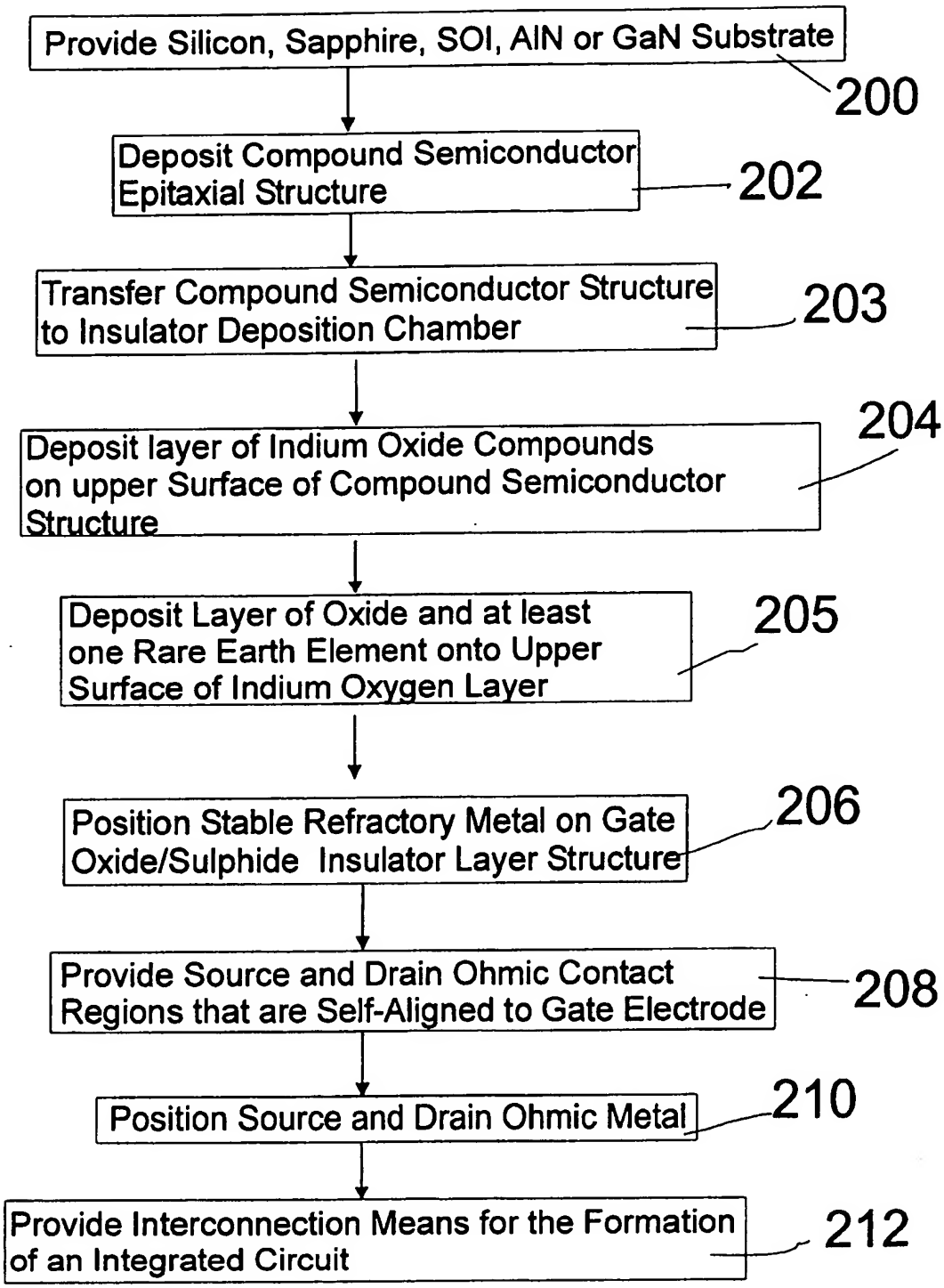
Provide Silicon, Sapphire, SOI, AlN or GaN Substrate
200
Deposit Compound Semiconductor Epitaxial Structure
202
Transfer Compound Semiconductor Structure to Insulator Deposition Chamber
203
Deposit layer of Indium Oxide Compounds on upper Surface of Compound Semiconductor Structure
204
Deposit Layer of Oxide and at least one Rare Earth Element onto Upper Surface of Indium Oxygen Layer
205
Position Stable Refractory Metal on Gate Oxide/Sulphide Insulator Layer Structure
206
Provide Source and Drain Ohmic Contact Regions that are Self-Aligned to Gate Electrode
208
Position Source and Drain Ohmic Metal
210
Provide Interconnection Means for the Formation of an Integrated Circuit
212

Figure 3

Layer	Thickness	Doping	Description	Comment
6	120	-	Gate-Oxide	
5	4	-	GaN	
4	300	n=1E18	AlGaN	x=0.20
3	500	n=2E17	InGaN	x=0.03
2	8000	-	GaN	buffer
1	500	-	AlN	buffer

Figure 4

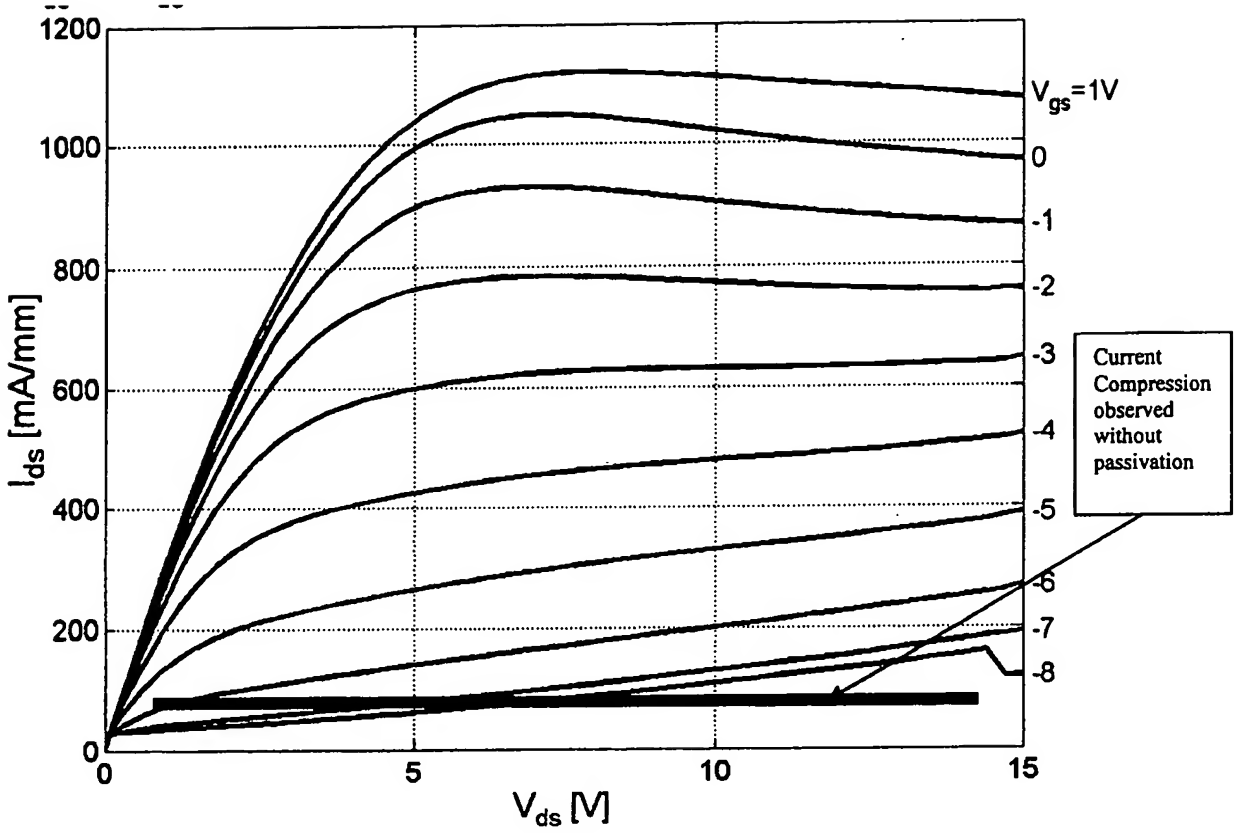
1200
1000
800
600
400
200
0
I_{ds} [mA/mm]
0
5
10
15
V_{ds} [V]
V_{gs}=1V
0
-1
-2
-3
-4
-5
-6
-7
-8
Current Compression observed without passivation

Figure 5

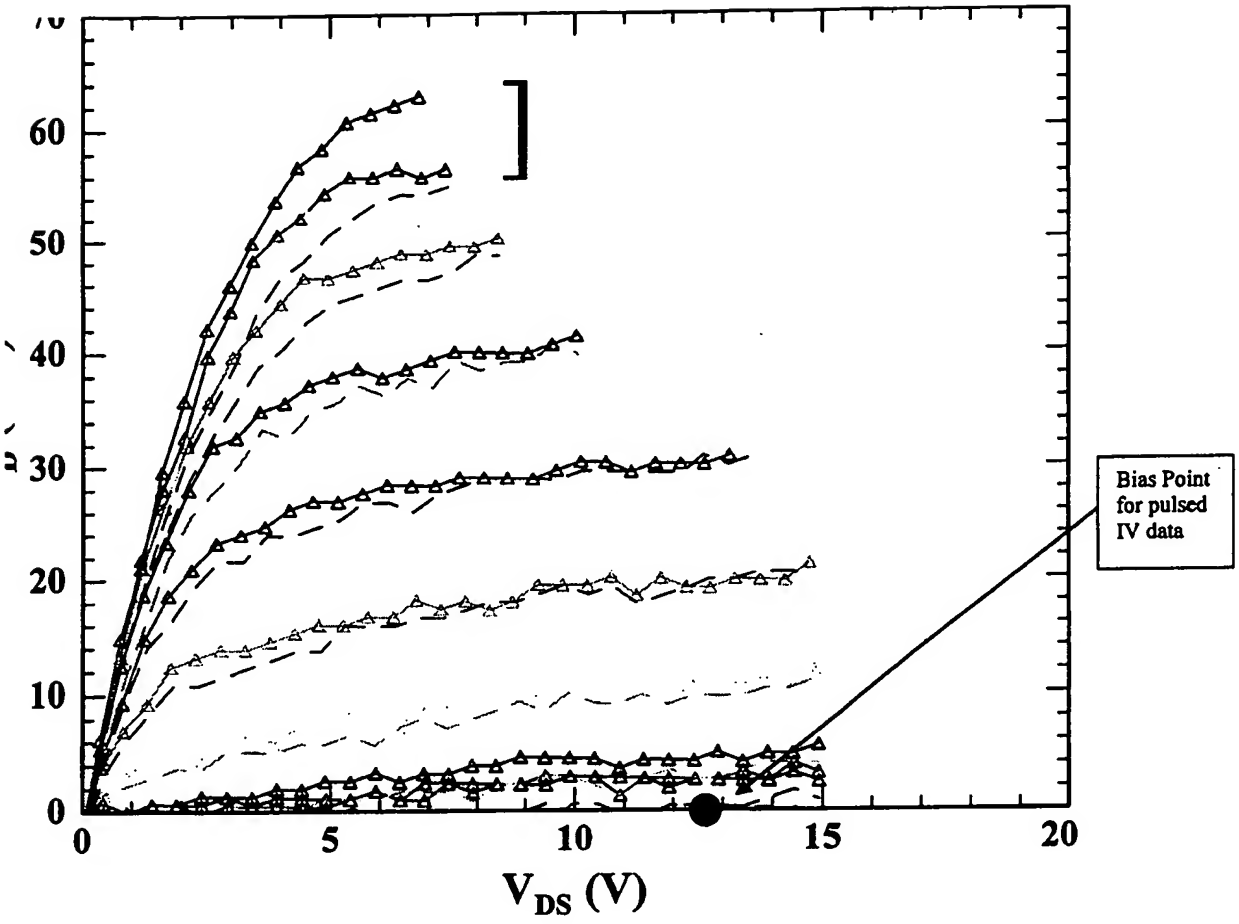

Figure 6

Layer	Thickness	Doping	Description	Comment
6	120	-	Gate-Oxide	
5	40	d-doped	AlN	
4	200	n=1E18	AlGaN	x=0.90
3	5000	-	AlN	buffer
2	<500	-	AlN	Nucleation layer
1		-	AlN	substrate

Figure 7